

United States Department of the Interior

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BURFAU OF LAND MANAGEMENT Riverside District Office 1695 Spruce Street Riverside, California 92507

OCT 1 8 1979

Dear Citizen:

Enclosed for your review is a copy of a draft Recreation Management Plan for the Afton Canyon Area of the California Desert Conservation Area.

The plan will be open to public comment until November 21. 1979. After review of all public comments, we will prepare a final plan which will be implemented.

Please send your comments promptly in order that they will be received in time to be given consideration in the final plan. All comments should be addressed to BLM, Cima Resource Area, 3623 H-101 Canyon Crest Drive, Riverside, CA 92507.

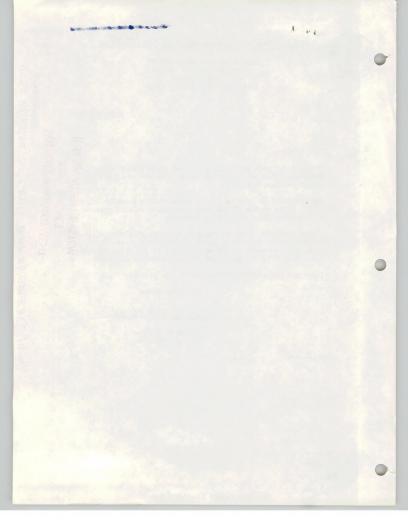
Thank you for your participation in this project.

Sincerely Yours,

Gerald E. Hillier District Manager

Enclosure





DRAFT

Afton Canyon

Recreation

Management

MILDLIFE MANAGEMENT
AND IMPACT
INFORMATION SYSTEM



Plan & E.A.R.

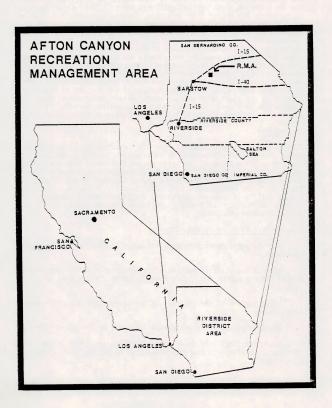
prepared by: U.S. Department of the Interior Bureau of Land Management Riverside District Cima Resource Area

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INTRODUCTION

A. Setting

The Afton Canyon Recreation Area is significant as it contains one of the few riparian areas in the California Desert. The recreation area is a part of the Mojave River drainage, located approximately 35 miles east of Barstow in central San Bernardino County, California, (T. 11 N., R. 6 E., SEM -- Cave Mountain and Cady Mountain quadrangles) between 1200 and 3700 feet elevation. The total area of concern is approximately 28 square miles, of which approximately 12 miles are privately owned by individuals and the Southern Pacific Land Company; the remainder is public land. The canyon is a well known recreation site. Water is perennial at the surface for a three to seven mile stretch through the Mojave River Gorge, supporting thickets of riparian vegetation, ponds, a marshland and a variety of wildlife species in the midst of a heavily eroded desert environment. The combination of a desert canyon and riparian habitat is rare when viewed on a desert-wide basis making the scenery at Afton unusual.

B. Purpose

This is a Recreation Management Plan for the Afton Canyon Recreation Area. The purpose of the Plan is to establish interim guidelines for the protection and use of the Afton Canyon Recreation Area during the period in which a comprehensive plan for the California Desert Conservation Area (mandated by the United States Congress in the Federal Land Policy and Management Act of 1976) is being completed. This plan's goal is to insure conservation and protection of resource elements through conflict resolution and to provide for appropriate multiple use of resources.

C. Summary of Major Recommendations

- Protect the wildlife habitat areas adjacent to Afton Canyon campground and throughout the Mojave River gorge by closing them to vehicles.
- ${\tt 3.}$ $\,$ Allow the use of the vehicles in the Canyon Corridor only on designated routes.
- 4. Allow camping only in designated locations in the Canyon Corridor.
- Allow campfires only in designated camping locations in the Canyon Corridor. Campfires in the campground will be allowed only in designated fire rings.

- 6. Prohibit the collection of firewood in the recreation area.
- 7. Provide areas for group camping with equestrian facilities.
- 8. Enforce the posted restriction which prohibits use of any firearm within one-half mile of the campground.
- 9. Provide for interpretation of the Afton Canyon area through signs and a descriptive flyer.
- D. Background
- 1. Historical Prospective

At the end of the last Ice Age, the Mojave Desert was a different land with pinyon-juniper forests and many lakes filled with glacial melt water and surrounded by game. The earliest known users of Afton Canyon may have hunted along the shrinking shorelines of these Ice Age lakes as long as 5 to 10 thousand years ago. At the time of the arrival of Europeans in North America, the Panimint Shoshone, Mohave and Chemehuevi Indians used areas in or near Afton Canyon, for collecting salt around dry lakebeds and using trails, rock cairns, rock alignments and intaglios to mark collection areas.

Since prehistoric times, water has determined the path of anyone crossing the Mojave Desert. Afton Canyon's dependable stream became a link in a chain of springs, known as the Mojave Trail, connecting the Colorado River Indians with other cultural groups on the coast. The Spanish Padre, Francisco Garces, led by an Indian guide, traveled over the route in the spring of 1776. Mountainmen and pathfinders such as Jedidiah Smith, Kit Carson, and the Fremont Party journeyed through the canyon in the early 1800's. During the last half of the 19th Century, the trail was developed into a wagon track called the Mojave Road and served as a link between Los Angeles and Prescott, Arizona, capital of the Arizona Territory. Army detachments guarded the road during the 1860's to protect travelers from Indian attack; however, shortly after, the road's importance faded when the Santa Fe Railroad was completed further south in 1833.

In 1905, tracks of the Salt Lake to Los Angeles rum of the Union Pacific Railroad were completed through the canyon. Flood damage occurred in 1938 when high waters took out sections of railroad grade. Travel through the canyon by motor vehicle remained difficult until the late 1960's when the railroad constructed a private maintenance road alongside their tracks.

Afton Canyon has been a recreation spot for decades. Prior to the construction of Interstate 15, the road into Afton was primitive, and very little traffic flowed into the area. Still, many persons camped at the site of the present BIM campground before its construction in

1968. The area has been popular with sightseers, hikers, rockhounds, birds, watchers, picnickers, researchers and campers, many using ORVs as a primary means of reaching outlying areas of the recreation area via roads and jeep trails.

In the last decade the driving of ORVs for a purely recreational experience (as opposed to ORV use in support of another activity such as rockhounding) has increased at Afton. This recreational ORV use includes hill climbs and cross-country travel off of existing roads and trails. The focus of this use in the recreation area has centered around the Afton Canyon campground. Off-road vehicles such as motor-cycles and dune buggies are most common weekends; weekdays are still dominated by the more traditional recreational activities described above.

Two recent natural events of significance are the flooding of the Mojave River in 1969, when peak streamflow reached 18,000 cfs, resulting in some damage to campground facilities, and a fire caused by a hot train brake which burned 20 acres in the riparian mesquite thickets adjacent to the campground in June of 1978. Both events point out potential hazards to Afton visitors.

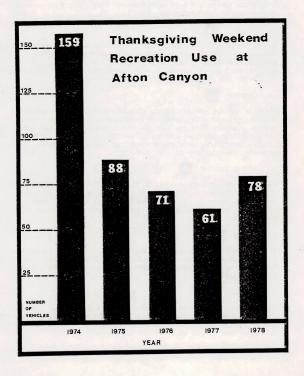
- 2. Recreation Use
- a. Off-road Vehicle Use

Afton Canyon's current designation under the BLM's interim critical management program for vehicle use on the California Desert is <u>special design</u>. Under a <u>special</u> designation:

"Plans will be prepared in cooperation with other governmental agencies and public interest groups to provide for vehicle use and related facilities such as camping areas and access roads. Until plans are completed vehicle use is permitted only on existing vehicle routes." (California Desert Vehicle Program Brochure and Map, G.P.O., 1977).

The variety of terrain, ease of access and many roads and trails provide any driver with recreational opportunities. Old jeep trails lead to mines in the Maverick Brothers Mountains and in the Cady Mountains to the south and west of Afton. Access to the south rim of the Afton Gorge can be gained from Basin or Afton railroad sidings via these scenic jeep trails. On the Cave Mountain side of Afton Canyon there are also mine roads and jeep trails.

In the last decade, resource damage caused by ummanaged recreational off-road vehicle use has become evident in many portions of the recreation area.



b. Informal Target Shooting

Informal target shooting takes place in the Afton Canyon Recreation Area. This type of use is sporadic and not necessarily associated with hunting, although, non-game species of wildlife are sometimes shot. Complaints to the BLM have been received from campers on uncontrolled firearm use in the campground.

c. Hunting

Hunting takes place in the Mojave River Gorge and surrounding uplands for doves and quail. At present, hunting success is considered marginal due to low populations of upland game. The decline in game populations has been noted since the development of the BIM campground at Afton.

d. Camping A

There is one designated camping area in Afton Canyon. Facilities include: 22 campsites, chemical restrooms and a limited potable water supply. Campers also use numerous other undeveloped sites throughout the recreation area, as camping is not restricted to designated locations. Campground campfires are not confined to fire pits. There are no posted restrictions on wood gathering.

e. Equestrian Use

Tremendous opportunities exist in the Afton Canyon area for trail rides by clubs and individual riders who can enjoy a variety of terrain and scenery. No developed facilities exist for such use, as stock are not permitted in the campground, and there are no horse canals.

f. Hiking

Hikers have been observed using various canyons and exploring the riparian areas. Opportunities exist for both nature and hiking trails through a variety of habitats, terrain and scenery. There are no developed hiking trails.

g. Picnicking

Many day users have been observed in the BLM campground. Those interviewed have come from the Barstow area. No special facilities exist other than the developed campground. Picnicking also takes place at scattered undeveloped locations in the recreation area.

Sightseeing

Visitors come to enjoy the Afton Canyon scenery on foot, by horseback or by vehicle. The colorful badland formations downstream from the campground contrast with the riparian areas which include the freeflowing Mojave River, riparian thickets and a marsh.

Rockhounding

The Afton Canyon area is the best rockhounding area between Barstow and Baker along I-15. Most of the collecting occurs in the mountain canyons south of the Mojave River Gorge. It is a well known collecting area for both individuals and clubs.

Nature Study and Observation



Individuals, colleges, universities and museums study the unusual botany, zoology, geology, paleontology, archaeology and hydrology at Afton Canyon. Recreational bird watching and other informal forms of nature study are also pursued. No on-site interpretation of these resources has been attempted.

- Other Resources
- Cultural Resource

Archaeological resources in Afton Canyon and its vicinity include sleeping circles, rock tools, economically significant salt collecting areas and segments of a number of Indian trails including the Mojave trail.

The Mojave trail which developed into the historic Mojave Road (also called Old Government Road), was an important avenue for frontiersman, and Afton Canvon was an important link. Still in active operation, the Union Pacific Railroad is a cultural resource with historical significance.

Water Resources

Surface water systems such as the Mojave River at Afton Canyon are rare and unusual in a desert ecosystem. The Mojave River originates in the San Bernardino Mountains near Lake Arrowhead and is fed by snowmelt and seasonal rainfall. The perennial stream at Afton is the river's last surface flow before it reaches the Mojave River Sink near Soda Dry Lake. The river supports a rich and diverse community of freshwater life ranging from micro-organisms and insects to fish and riparian vegetation. When last tested the water quality was good (December 6, 1978).

c. Vegetative and Wildlife Resources

Afton Canyon is significant as it contains one of the few true riparian areas in the California desert. The ponds, marshes and stream, with their numerous species of riparian plants, provide habitat for wildlife species found only in a few other widely scattered riparian areas. The mesas and low mountains surrounding Afton support Mojave Desert scrub type vegetation (characterized by creosote bush) and a variety of desert wildlife species. Over 180 species of birds have been documented here, desert bighorn sheep water in the Mojave River Gorge during summer months and the easternmost known population of the western pond turtle lives in standing water, attesting to the variety and rarity of the living resources in Afton Canyon Recreation Area.

d. Geologic and Mining Resource

In prehistoric times, the California Desert was a lush savannah with broad lakes, consequently, today it contains a wealth of fossils. The Afton area is a source of vertebrate fossils of animals peculiar to the western United States one to fifteen million years ago. One of the lakes supporting this life, Lake Manix, was formed by recurrent faulting which dammed the ancestral Mojave River at Afton Camyon. The well preserved remains of a Lake Manix gravel bar northwest of the campground are an outstanding example of this type of late Ice Age formation.

Mineral deposits of gold, iron, manganese, fluorspar and magnesite occur inside the recreation area. Active mines for limestone and iron lie just outside the recreation area boundary near Basin.

e. Visual Resource

The Mojave River Gorge walls are steep with high cliffs broken by heavily eroded badland formations. Distinct alluvial fans lie at the mouths of side canyons. Color combinations are diverse; shadows are stark in low angle light. The variety of vegetation types, which include a freshwater marsh, is unusual. The combination of desert canyon, running stream and marshland is rare when viewed on a desert-wide basis. There are some cultural intrusions which detract from scenic quality; among these are hillsides with scars from recreational off-road vehicle use, the railroad and its facilities, and the campground.

f. Grazing Resource

A small part of the western portion of the recreation area is grazed by a variable number of livestock under an ephemeral grazing lease arrangement. The total acreage of the allotment on public land is 1,215.61 acres.

4. Factors Affecting Recreation Use

a. Access - The Afton Canyon Recreation Area is easily accessible to the public. A 3-1/2 mile graded road leads to the campground from the Afton Interchange along I-15. The road is suitable for most recreational vehicles, but due to two steep grades and rough conditions after adverse weather, the road may be difficult for long trailers or low-clearance vehicles.

Interstate 15

The campground is less than 4 miles from Interstate 15, which handles traffic between Las Vegas and Los Angeles. Some recreation area users are travelers looking for a place to camp.

c. Nearby Population Centers

Within 200 miles of Afton Canyon is Los Angeles County, with a population of over 10 million people. Barstow, located within 35 miles of Afton Canyon, has a population of approximately 20,000.

d. Afton Road Stuckey's - The Stuckey's at the Afton Road I-15 Interchange offers the closest gasoline, lunch counter and telephone to Afton Canyon.

e. Union Pacific Railroad

The service road which follows the Union Pacific Railroad right-of-way through Afton Canyon is the only vehicle access through the Mojave River Gorge. Use of this route is exclusively under control of the railroad and reserved for their use.

Trains are noisy, but biologists have found that wildlife adapt easily to this short duration interruption which may occur more than a dozen times per day.

Several railroad employees live near the campground on the south side of the Mojave River at Afton Siding. The residence area consists of dwellings and railroad maintenance equipment.

f. Hazards - Both licensed and unlicensed motorcycles use the roads in the area. Because of the winding turns and blind corners, speeding motorcyclists sometimes present a hazard to themselves and other motorists.

As demonstrated by the fire in the summer of 1978, there is a potential for brush fires in the riparian vegetation in the campground area.

During hunting seasons, and when indiscriminate target shooting occurs, a shooting hazard exists.

The campground, which lies in the Mojave River flood plain, was flooded in 1969. A sign reading, "Caution - area subject to flooding beyond this point," stands where Afton Road enters the flood plain. The 100 year flood plain is now being studied by the United States Army Corps of Engineers to determine if a flood hazard exists for recreationists using Afton Canyon. Additional signs will be posted if warranted by the flood hazard evaluation.

Freight trains of the Union Pacific Railroad travel through Afton Canyon several times per day. Potential hazard exists for any person or vehicle standing on or too close to the tracks when trains pass by.

E. Constraints

At the present time no completed Resource Management Plan exists for Afton Canyon. Therefore, there are no management planning constraints or restrictions on this recreation plan. Following the completion of this recreation plan, an Environmental Analysis Record may identify additional protective measures and constraints.

II. OBJECTIVES

A. Recreation Management Objective

Provide for appropriate recreation use, interpretation and facility management in the Afton Canyon Recreation Area.

B. Administrative Management Objective

Provide the personnel, jurisdictional authority, and facilities necessary to achieve recreation and other resource objectives for the recreation area.

C. Other Resource Management Objectives

1. Wildlife Resource Objectives

Manage recreation use to protect both wildlife and wildlife habitat from any further human-related impacts and to enable recovery of damaged habitat.

2. Water Resource Objectives

Manage recreation use in a manner that will maintain the water quality and the existing streamflow for all recreational and wildlife requirements.

3. Visual Resource Objective

Manage recreation use to comply with the established BLM visual resource management objectives.

4. Cultural Resource Objective

Manage recreation use to minimize impacts to cultural values.

5. Lands Objective

Develop a cooperative arrangement with private landowners in the recreation area to facilitate signing and achieve proper management of the entire area.

III. THE MANAGEMENT PLAN

A. Management Goal

Manage recreation to resolve conflicts between various users, minimize adverse impacts on other resources, and provide for appropriate recreation uses consistent with good resource management practices.

Carry out the management of recreational activities with minimal intrusions and impacts on sensitive resource elements. The scenic, cultural, geological, biological and ecological values are all recognized as leading elements of the resource.

The Federal Land Policy and Management Act of 1976 provides for the protection and enhancement of public lands. Interim management of the Afton Canyon Recreation Area will provide for administrative controls to protect the resources from unauthorized uses and abuses, and to increase public awareness of the program to insure the protection and conservation of the area.

B. Management Philosophy

Past experiences at Afton Canyon point out the desirability of regulating and protecting facilities, resources and users within the recreation area. Administrative controls will initially rely heavily on creating a strong BIM presence in the area to establish the new policies. Once these policies have been established, visitor compliance with rules as indicated on signs will play the largest role in regulating campground use, with an assist by regular ranger patrols.

Because of the wide variety of recreational uses and individual users, recreation opportunities will be left unstructured, except where activities conflict or impair the enjoyment of other activities or the maintenance of other resource values.

C. Recreation Management Zones

Zones are necessary to define vehicular access and provide for different patrol needs.

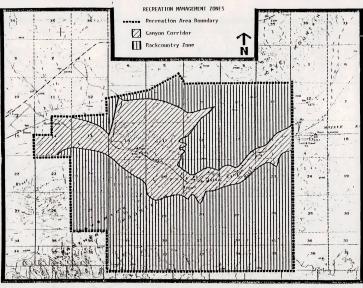
1. Canyon Corridor

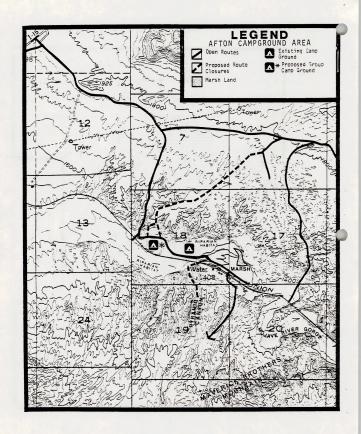
A zone of intensive management with the majority of ranger patrols, designated vehicle routes and designated camping areas.

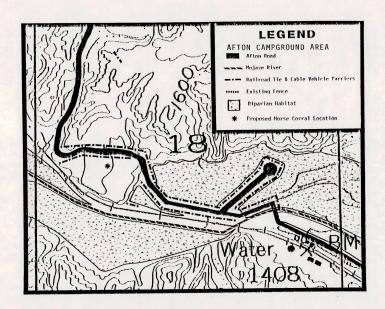
2. Backcountry Zone

Ranger patrols will be less frequent than in the Canyon Corridor, vehicles will use existing roads and trails, and there will be no restriction on camping locations.

LEGEND







- D. Recreation Programs and Actions
- 1. Off-road Vehicle Use

Management Goal

Halt the decline in resource values in the recreation area while providing for managed recreational use of off-road vehicles.

Actions

- a. Allow vehicle use in the Canyon Corridor only on designated routes. Sign existing routes in the Backcountry Zone.
- b. Install physical barriers along portions of the Afton Canyon Road and the perimeter of the campground to prevent vehicles from entering sensitive habitat.

Discussion

Numerous conflicts arising from unmanaged off-road vehicle use in the recreation area have resulted in a need to designate routes, to sign routes, and to install barriers.

Enforcement of already existing campground rules will reduce both dust and noise disturbances to campers.

Implementation

Publish the vehicle use restrictions in the <u>Federal Register</u> and in local, State and Federal publications designed to alert the general public to these changes.

Post signs and distribute an interpretive flyer to inform the public of vehicle restrictions and to identify vehicle routes.

Enforcement of these restrictions will be carried out by an authorized law enforcement official.

2. Firearms Use and Hunting

Management Goal - Minimize the hazards to visitors from the use of firearms in Afton Canyon.

Actions - Enforcement of the posted restrictions which prohibits use of firearms within one-half mile of a campground. Post additional signs.

<u>Discussion</u> - No shooting is premitted within 1/2 mile of a campground. <u>Some users</u> are disregarding posted campground firearm regulations and have discharged firearms inside the no shooting area.

Due to hazards associated with the discharge of firearms in an intensively used recreation area, certain management restraints must be implemented to assure visitor safety. The Bureau has no authority to directly regulate hunting seasons or restrictions. This power is the responsibility of the California State Fish and Game Department. The Bureau can, however, regulate shooting activities by imposing a "no shooting" or "no firearms" regulation in an area.

The proposed action is not designed to discriminate against hunters or target shooters, but is intended to protect the visitors to Afton Canyon.

<u>Implementation</u> - Maintain current signing. Post additional signs to inform the public and define the restricted areas.

The enforcement of these restrictions will be the responsibility of an authorized law enforcement official.

3. Camping A

Management Goal - Provide opportunities in the recreation area for both developed, undeveloped and group camping but not at the expense of the natural and cultural values of Afton Canyon.

Actions

- Allow camping only in designated locations in the Canyon Corridor.
- Allow campfires only in designated camping locations in the Canyon Corridor. Fires in the campground will be allowed only in designated firepits.
- Prohibit the collection of firewood,
- Provide areas for group camping with sanitary facilities.

Discussion

Sensitive wildlife habitat at Afton Canyon must be protected from impacts resulting from ummanaged camping.

With the potential fire hazard, required use of approved fire recepticals would reduce the chance of fire accidents.

Firewood collecting has been identified as impacting wildlife habitat. Desert campers should be educated to bring their own firewood.

There is need for a group camping area with sanitary facilities. Sanitary facilities will help insure water quality.

Implementation

Identify camping areas on informational and directional signs and in an interpretive flyer.

Install concrete fire rings at each campsite in the developed campground.

Post signs prohibiting the collection of firewood.

Both enforcement and non-enforcement personnel will make contact with campers to explain camping regulations and why desert campers should bring their own firewood.

Install sanitary facilities at the group site.

Enforcement of all regulations will be carried out by an authorized law enforcement official.

4. Equestrian Use

 $\frac{\text{Management Goals}}{\text{Afton Canyon Rec}} \text{ - Improve opportunities for horseback riding in the } \\ \frac{\text{Afton Canyon Rec}}{\text{Afton Canyon Rec}} \text{ - Improve opportunities for horseback riding in the } \\ \frac{\text{Management Goals}}{\text{Afton Canyon Rec}} \text{ - Improve opportunities for horseback riding in the } \\ \frac{\text{Management Goals}}{\text{Afton Canyon Rec}} \text{ - Improve opportunities for horseback riding in the } \\ \frac{\text{Management Goals}}{\text{Afton Canyon Rec}} \text{ - Improve opportunities for horseback riding in the } \\ \frac{\text{Management Goals}}{\text{Afton Canyon Rec}} \text{ - Improve opportunities for horseback riding in the } \\ \frac{\text{Management Goals}}{\text{Afton Canyon Rec}} \text{ - Improve opportunities for horseback riding in } \\ \frac{\text{Management Goals}}{\text{Afton Canyon Rec}} \text{ - Improve opportunities } \\ \frac{\text{Management Goals}}{\text{Afton Canyon Rec}} \text{ - Improve opportunities } \\ \frac{\text{Management Goals}}{\text{Afton Canyon Rec}} \text{ - Improve opportunities } \\ \frac{\text{Management Goals}}{\text{Afton Canyon Rec}} \text{ - Improve opportunities } \\ \frac{\text{Management Goals}}{\text{Afton Canyon Rec}} \text{ - Improve opportunities } \\ \frac{\text{Management Goals}}{\text{Afton Canyon Rec}} \text{ - Improve opportunities } \\ \frac{\text{Management Goals}}{\text{Afton Canyon Rec}} \text{ - Improve opportunities } \\ \frac{\text{Management Goals}}{\text{Afton Canyon Rec}} \text{ - Improve opportunities } \\ \frac{\text{Management Goals}}{\text{Afton Canyon Rec}} \text{ - Improve opportunities } \\ \frac{\text{Management Goals}}{\text{Afton Canyon Rec}} \text{ - Improve opportunities } \\ \frac{\text{Management Goals}}{\text{Afton Canyon Rec}} \text{ - Improve opportunities } \\ \frac{\text{Management Goals}}{\text{Afton Canyon Rec}} \text{ - Improve opportunities } \\ \frac{\text{Management Goals}}{\text{Afton Canyon Rec}} \text{ - Improve opportunities } \\ \frac{\text{Management Goals}}{\text{Afton Canyon Rec}} \text{ - Improve opportunities } \\ \frac{\text{Management Goals}}{\text{Afton Canyon Rec}} \text{ - Improve opportunities } \\ \frac{\text{Management Goals}}{\text{Afton Canyon Rec}} \text{ - Improve opportunities } \\ \frac{\text{Management Goals}}{\text{Afton Canyon Rec}} \text{ - Improve opportunities } \\ \frac{\text{Management Goals}}{\text{Afton Canyon Rec}} \text{ - Imp$

Action - Construct a corral and hitching area at a suitable site.

<u>Discussion</u> - Horseback riding is a popular activity in the Afton Canyon Area. By Federal regulation (Title 43 CFR, Chapter II, Part 6261, 5(d)) stock is not permitted in the campground, but no equestrian facilities exist at an alternative site. Future needs may also warrant an equestrian trail system which could be used to route users to the scenic and cultural highlights of the area.

Implementation - Construct a corral and hitching posts.

5. Hiking Use 🏌

Management Goals - Maintain opportunities for hiking in the Afton Canyon Recreation Area.

Actions - None.

<u>Discussion</u> - Hiking use takes place in the Afton Canyon area but, at this time, does not warrant any developed trails or trail system. Any future trail system could be used to route users to the scenic and cultural highlights of the area.

Implementation - None.

6. Picnicking Use 7

Management Goal - Maintain areas for picnicking that do not conflict with other uses.

Action - None.

<u>Discussion</u> - At the present time, existing facilities are adequate to <u>provide</u> for picnicking use.

Implementation - None.

7. Sightseeing and Nature Study 🥃 🔣 슙 📵

Management Goal - Maintain sightseeing and nature study opportunities through the proper management of all resources.

Actions

- 1. Provide for interpretation of the Afton Canyon area through signs and a descriptive flyer.
- 2. Insure rehabilitation (natural or mechanical) of roads, trails or disturbed areas within the Camyon Corridor which are not designated for vehicle use as part of the proposed vehicle route system.

<u>Discussion</u> - Numerous individuals, colleges and museums use the Afton Canyon Area for formal and informal nature study. Others visit the area because it is simply a nice place to camp and sightsee. The scarcity of wetland environments in the Mojave Desert further increases Afton Canyon's value as a place for nature study and sightseeing.

Interpretation will enhance the quality of this recreational experience.

Through interpretation, visitor awareness of resource values is increased and problems with inappropriate use are reduced. Emphasis will be placed on describing recreation opportunities, regulations, restrictions and closures. Biological, geological, archaeological and historical themes are also significant.

Implementation - An interpretive flyer covering the Afton Canyon area will be prepared and made available.

Interpretive signs will be erected explaining natural and cultural values and points of interest. These signs will be inexpensive and easy to replace.

Rehabilitate closed roads and trails utilizing natural or mechanical means.

8. Rockhounding

Actions - None.

<u>Discussion</u> - Rockhounding is a dispersed activity depending upon the availability of specimens and access to collecting areas. The Bureau has no control over the natural forces of erosion or the occurrence of collectible rocks and minerals. The proposed designation of vehicle routes is not expected to affect access to collecting areas.

Implementation - None.

E. Administrative Programs and Actions

1. Visitor Protection

Visitors will be advised of the potential hazards present in the recreation area, i.e., heat, wildfire, mine hazards, poisonous animals (insects, scorpions, spiders and rattlesnakes), and water quality. A BLM brochure exists for public distribution outlining these and other items concerning visitor protection and will be stocked at the campground.

Enforcement

The key to successfully implementing this plan will be a well developed and organized law enforcement program. This will involve utilizing full-time, trained Bureau employees with full enforcement capabilities. Patrol of Afton Canyon will be increased to levels necessary to effectively manage visitors and the resources.

Maintenance

An active facility maintenance program is an essential element of this plan. $\ensuremath{\mathsf{P}}$

4. Public Affairs

Implement a well organized public awareness program to advise the public of ongoing and proposed programs, new restrictions and regulations, and the recreational opportunities available in the recreation area. This program should be developed in the close coordination with law enforcement efforts and the implementation of this plan.

5. Monitoring Use

Develop an efficient means of systematically gathering and analyzing visitor use information to monitor use in the recreation area. Traffic counters will be installed, maintained and monitored.

F. Facility and Site Development

The esthetic, historic and biologic integrity of the entire Afton Canyon Recreation Area must be of prime consideration in all development. In keeping with the historic railroad use of Afton Canyon, railroad ties and other railroad paraphernalia will be used in construction whenever possible to convey this major theme.

1. Campgrounds

a. Developed

Afton Canyon Campground - A low, unobstrusive barrier of railroad ties and cable will be constructed around the campground perimeter to prevent vehicles from entering the sensitive wildlife habitat areas. Additional posts will be installed around campsite parking pads and the campground loop road to keep vehicles on the road and on the parking pads. Concrete fire rings will installed.

b. Undeveloped

The undeveloped campground will be signed and its location indicated on the campground kiosk map and in an interpretive flyer. Chemical toilets and trash recepticals will be installed in the undeveloped campground. The perimeter of the undeveloped campground will be defined by posts or markers.

2. Equestrian Facilities

<u>Horse Corral</u> - Two horse corrals and a hitching post will be constructed at the group camping area. These facilities will be of a temporary nature. Materials used will reflect the railroad theme.

3. Roads and Trails (vehicular)

A low, unobstrusive barrier of railroad ties and cable will be constructed along the edge of the Afton Canyon access road where necessary to manage vehicle access to sensitive areas. The proposed barrier locations are displayed on the maps. The proposed designations for roads, trails and river crossings are displayed on the map. All designated routes in the Canyon Corridor will be signed. Recommended routes in the Backcountry Zone will be signed. BLM only has road maintenance responsibilities for the camperound loop road.

G. Utilities and Sign Development

1. Water

The only developed water source designated for human consumption is located at the BLM campground. No additional consumptive water sources will be installed.

Sanitation

The restrooms to be located at the undeveloped campground area will be chemical and of a temporary nature. The restrooms will be maintained as needed.

3. Signs

Develop signing program which will provide consistency and standardization in the placement and type of signs used. Due to potential vandalism, all signs will be low cost and easily replaceable.

H. Interpretive Program Development

1. Interpretive Flyer

An interpretive flyer will be prepared and made available to the public describing recreation opportunities, hazards, new restrictions and new regulations in the recreation area. The flyer will include a map of the designated roads and trails. This flyer will be a low-cost (xeroxed) publication of no more than 2 pages in length which will be distributed in dispenser boxes on-site, and at BLM offices and visitor centers.

2. Information Kiosks

Information kiosks in the campgrounds and at the junction of I-15 and the Afton road will also describe recreation opportunities and the new management practices including regulations, locations of camping facilities, and a map of designated roads and trails.

3. Interpretive Signs

Additional interpretive signs will be erected to explain biological and cultural values, hazards and points of interest. These signs will be inexpensive and easy to replace.

TV. THE IMPLEMENTATION PLAN

Implementation of this plan will be accomplished in three phases. These phases are not tied to specific deadline dates, but indicate the general sequence of events required to implement this plan in an organized manner.

A. Phase I

- 1. Federal Register Publication Proposed use restrictions identified in the Management Plan will be published in the Federal Register.
- Public Affairs The BLM, Riverside District, Office of Public Affairs, will initiate a series of articles and news releases advising the public of ongoing and proposed programs, new restrictions and regulations, and the recreational opportunities available in Afton Canyon.
- 3. Layout Layout will be initiated on all proposed developments listed in The Management Plan.
- Signing Program Complete a cooperative arrangement with private landowners for signing on private lands. Determine sign needs and requisition required signs.
- 5. <u>Interpretive Flyer</u> An interpretive flyer will be made available to the public <u>describing</u> recreation opportunities, hazards, new restrictions and new regulations in the recreation area. The flyer will include a map of the designated roads and trails.
- 6. <u>Enforcement</u> BIM law enforcement personnel will patrol the Afton Canyon Recreation Area on a regular basis. As enforcement personnel become active in the recreation area, all use restrictions will be enforced. Enforcement will be a continuing program.
- 7. Maintenance Maintenance functions will continue on all existing facilities in the recreation area including all structures, roads, fences and any areas needing litter clean-up or rehabilitation. This will be a continuing program.
- 8. Visual Contrast Rating All proposed developments will be analyzed using the Bureau's Visual Contrast Rating System to determine their potential impact on the visual environment. This system is designed to identify the visual contrast between a proposed development and its surrounding landscape. Once contrasts are identified, measures can be taken to reduce their impact through special design features.
- 9. Monitor Visitor Use Collect visitor use data by utilizing traffic counters.

10. Water Resources - Monitor water quality and stream flow of the Mojave River at Afton Canyon to fulfill water resources objectives.

B. Phase II

Construction of projects outlined in the Management Plan will proceed on signs, barriers, restrooms, and corral.

C. Phase III

Any projects not completed in Phase II will be carried over to Phase III. Continue to implement program. Review entire project to determine if programs are meeting the goals of the plan. Revise the plan as needed to reflect changing conditions, trends and public needs.

V. APPENDIX

A. Land Status

There are approximately 17,520 acres of land in the Afton Canyon Recreation Area. Approximately 9,840 acres are public land and 7,680 acres are privately owned land. Approximately 6,200 acres of the private holdings belong to the Southern Pacific Land Company and approximately 1,480 acres belong to other private owners.

Existing Leases

A grazing allotment lessee holds a lease on 1,215.61 acres of public land in the Afton Canyon Recreation Area. The lease includes the following lands:

T. 11 N., R. 6 E., SBM,

Sec. 18, S12SW14;

T. 11 N., R. 5 E., SBM,

Sec. 14, S12, NE14

Sec. 24, all.

The Southern Pacific Land Company leases the following land in the Afton Canyon Recreation Area to the same lessee.

T. 11 N., R. 5 E., SBM,

Sec. 13, all.

2. Withdrawals

Public Water Reserve No. 107: PWR 107 is a continuing blanket type withdrawal; it was made by Executive Order effective April 17, 1926 under the authority of the Pickett Act (36 Stat. 847, 45 USC 141-143) as amended. The lands are reserved for public use in accordance with the provisions of sec. 10 of the Act of December 29, 1916 (39 Stat. 865, 43 USC 300). This Public Water Reserve No. 107, (Interpretation No. 136) dated August 28, 1930, identified the lands noted below as within Public Water Reserve.

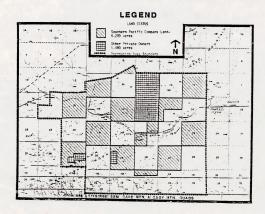
T. 11 N., R. 6 E., SBM,

Sec. 18, N2S12

Sec. 20, NWaNE4, NaNW4

 Multiple-Use Management Act: Pursuant to the Act of September 19, 1964 (43 USC 1411-18) and to the regulations in 43 CFR 2410 and 2411,

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the public lands described below are classified for multiple-use management. The described lands were segregated from appropriation under the agricultural land laws and from public sale on July 22, 1968:

T. 11 N., R. 5 E., SBM, all

T. 11 N., R. 6 E., SBM, all

The following lands were also segregated from appropriation under the mining laws (30 USC ch. 2):

T. 11 N., R. 6 E., SBM,

Sec. 14, lots 1 to 9, inclusive, NW4NE4, N5NW4, SE4;

Sec. 15, El2SW4, SE4;

Sec. 18, lots 1 to 4, inclusive, NE4, ELW2, SE4;

Sec. 20;

Sec. 21, NW4, N2SE4;

Sec. 22.

4. Public Land Order 5224: Land totaling 320 acres was withdrawn for the protection of recreation and public values under authority of Executive Order No. 10355 of May 26, 1952. Subject to valid existing rights the following described public lands were withdrawn from all forms of appropriation under the public land laws, including the mining laws (30 USC Ch. 2):

T. 11 N., R. 6 E., SBM,

Sec. 18, Lots 3 and 4, El2SW4, and SE4.

5. Existing Designations

Afton Canyon Recreation Lands: Under the authority of 43 CFR 2070 the following lands were designated as Afton Canyon Recreation Lands by the Secretary of the Interior on July 1, 1972:

Class II - General Outdoor Recreation Area

T. 11 N., R. 6 E., SBM

Sec. 17, W12, SE14 Secs. 18, 20, 21

2,411 acres

Class III - Natural Environment Area

T. 11 N., R. 5 E., SBM,

Sec. 13 Sec. 14, Lots 1, 2, 3, 4, NE4, N4S4

Sec. 24
T. 11 N., R. 6 E., SBM

Sec. 14 Sec. 15, E½SW4, SW4 Secs. 19, 22

Sec. 28, N¹₂

4,242 acres

 Federal Land Policy and Management Act: By this act of the Congress on October 21, 1976, the following lands were included in the California Desert Conservation Area:

T. 11 N., R. 5 E., SBM

T. 11 N., R. 6 E., SEM

Existing Rights of Way or Encumbrances

Union Pacific Railroad (LA 019101 \S R 01531) 100 feet from either side of the centerline, sec. 13 \S 14, T. 11 N., R. 5 E., \S sec. 13, 14, 15, 18, 20, 21, \S 22, T. 11 N., R. 6 E.

Railroad Station Grounds (R 01529), sec. 17, T. 11 N., R. 6 E.

Railroad Waste Area (CA 5061 application), sec. 20, T. 11 N., R. 6 E.

Transmission Line (R 01730) 50 feet from either side of the centerline, sec. 5, 6, \S 7, T. 11 N. R. 6 E.

Transmission Line and Access Road (R 2441), sec. 20, T. 11 N., R. 6 E.

B. Letters - The following are the three most recent letters received by the $\overline{\rm BIM}$ on Afton Canyon.

Letter dated March 11, 1979 found in fee collection envelope:

Sir:

Throughout our thousands of miles traveling about our country, I have yet to encounter amything like this campground. Between the constant noise of off-road vehicles (bikes, Hondas, dume

buggies, etc.) in and around the camp; the chemical toilet is so bad one needs a gas mask to get within 100 yards of it.

Due to the disappointments, we are signing out much earlier than planned. $% \left(1\right) =\left(1\right) \left(1\right)$

Letter dated November 9, 1978 found in fee collection envelope:

In the 20 years we've been camping, we've never run across such an inconsiderate group of people as came in today with 6 cycles, 2 dume buggies and 1 jeep. They chase (sic) the campgrounds as a race track instead of going out of camp. They were asked nicely to slow down and ignored the request.

We came away from the city to enjoy the fresh air, peace and quiet: it was worse here than at home.

We donated our \$2.00, as we <u>cannot bear</u> the attitude of the people. We've been here twice before; however, we may never come back.

I strongly suggest a posted speed or eliminate motorcycles completely from the campgrounds!

Please respond.

Letter dated May 10, 1979 sent to Cima Resource Area, Riverside District Office, and California State Office:

Where are the B.L.M. Rangers?

We spent the weekend of April 28, 29 at Afton Canyon, arriving about noon Saturday. From the time of our arrival until past 8:30 in the evening and again Sunday, dune buggies and motor-cycles raced in and about the camp creating excessive noise and dust. Then, as we sat around the fire ring Saturday evening, a shot was fired with the bullet passing so close that we all heard the whiz and breaking brush just above our heads and on the other side of the fire.

The reason for my opening question, "Where are the Rangers?" is that there was no one to enforce the rules and regulations of the campground during our entire stay at Afton Canyon. The only B.L.M. person we saw was a young fellow cleaning up Sunday morning, and he said his radio was inoperative, so he could make no calls for help.

The lack of enforcement, and the crashing bullet close overhead with the resulting fear my family felt will make it difficult for me to persuade them to return to that beautiful area or other B.L.M. campgrounds, for that matter.

C. Glossary

<u>Cultural Resources</u> - Cultural resources are defined as those fragile and non-renewable evidences of human activity, occupation, and endeavor as reflected in districts, sites, structures, artifacts, objects, ruins, works of art, architecture, and natural features that were of importance in human events. Cultural resources are further categorized in terms of their prehistoric and historic values, however, each of these aspects merely represents a part of the continuum of events from Man's earliest evidences to the present time.

 $\underline{\text{Firearm}}$ - A weapon from which shot is discharged by gunpowder or compressed gases.

<u>Kiosk</u> - An outdoor information structure with areas for messages, maps, and interpretive literature.

Off-road Vehicle (ORV) - Any motorized vehicle capable of, or designed for travel on or immediately over land, water, or other natural terrain, excluding; (1) any nonamphibious registered motor boat, (2) any military, fire, emergency, or law enforcement vehicle while being used for emergency purposes; (3) any vehicle whose use is expressly authorized by the authorized officer except use authorized under 45 CFR 6294.1 (organized ORV events requiring a permit); or otherwise officially approved; (4) official use; and (5) any combat or combat support vehicle when used in times of national defense emergencies.

Recreation Management Plan - The recreation management plan provides detailed guidelines used in the management of the recreation resources present in the specific area. The plan (1) establishes management objectives, (2) defines specific projects and programs needed for implementation of the proposed actions, and (4) supplies background data used in determining the actions.

Resource Management Plan - A planning decision document which establishes, for a given area of land, land use allocations, coordination guidelines for multiple use, and objectives to be achieved for each class of land use or protection. It is the Bureau's Land Use Plan.

Riparian - Of, on, or pertaining to the bank of a river, pond, or small lake.

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DRAFT

Afton Canyon

Recreation

Management

Plan

Environmental Assessment Report

prepared by: U.S. Department of the Interior Bureau of Land Management Riverside District Cima Resource Area

Afton Canyon Recreation Management Plan Environmental Assessment Record

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I. SETTING

Afton Canyon is a well known recreation site. The Mojave River flows perennially at the surface for a 3 to 7 mile stretch through the Mojave River Gorge, supporting thickets of riparian vegetation, ponds, a marshland and a variety of wildlife species in the midst of a heavily eroded desert environment. The combination of a desert canyon and riparian habitat is rare when viewed on a desert-wide basis making the scenery at Afton unusual. The recreation area is located approximately 35 miles east of Barstow in central San Bernardino County, California. The total area of concern is approximately 28 square miles of public and private land.

II. PURPOSE

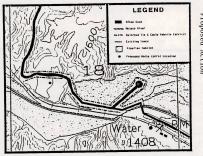
The purpose of the Recreation Management Plan is to establish interim guidelines for the protection and use of the Afton Canyon Recreation Area during the period in which a comprehensive plan for the California Desert Conservation Area (mandated by the United States Congress in the Federal Land Policy and Management Act of 1976) is being completed. The plan's goal is to insure conservation and protection of resource elements through conflict resolution and to provide for appropriate multiple use of resources.

III. DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

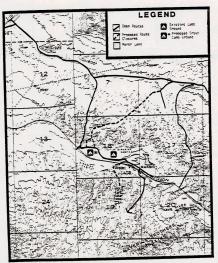
A. PROPOSED ACTION

To resolve conflicts between various users, minimize adverse impacts on other resources, and provide for appropriate recreation uses consistent with good resource management practices, the following actions are proposed:

- 1. Increase ranger patrols
- Limit vehicular use to designated roads and trails (this will require additional signs and physical barriers)
- 3. Limit camping to designated areas
- 4. Improve fire control procedures
- 5. Initiate an interpretive program
- 6. Rehabilitate damaged areas (roads and trails)
- 7. Some recreation uses will be expanded (equestrian) and some will be restricted (target shooting, recreational off-road vehicle use)

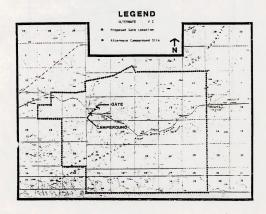


Proposed Action



Proposed Action

LEGEND ATTEMPT Trees Proposed for Classes 10 The Classes 10 The



B. ALTERNATIVE #1

This action would use already existing management policies and regulations to manage the recreation area. Of the proposed actions listed above, only parts I and 2 (slightly modified) would be enacted. This alternative would utilize the BLM's Interim Critical Management Program for Vehicle Use on the California Desent (ICMP) and Title 43 Code of Federal Regulations. Part 2 would be modified to limit vehicular use only to existing roads and trails, with only signs used to control access. Under the ICMP, sensitive areas may be closed to vehicle use. Sensitive habitat for wildlife and areas of cultural and visual concern near the campground would be closed to vehicles (see map).

C. ALTERNATIVE #2

This action would inact the proposed action with some major modifications which are listed below:

- 1. Relocate the campground out of the canyon bottom.
- 2. The only road designated for vehicular use in the recreation area would be the Afton Road. Beyond the proposed relocation site for the campground, only vehicles operated by persons with a prior, valid existing right would be permitted. (A gate is proposed for this purpose.) Remaining roads would be removed or rendered unusable.
- 3. Equestrian opportunities would not be expanded.
 - D. ALTERNATIVE #3 no action

The no action alternative would perpetuate the existing situation in which the Bureau has little control of recreation activities in Afton Canyon.

IV. DESCRIPTION OF THE EXISTING ENVIRONMENT

A. NON-LIVING COMPONENT

Climate and Air Quality

The general climate of the area is hot and arid, with summer high temperatures ranging from $100 \text{ to } 115^{\circ} \text{ F.}$ Winter low temperatures may drop below freezing with highs in the 70°s.

Total precipitation is from 2 to 5 inches per year. Rain during winter months is generally slow and gentle allowing moisture sufficient time to soak into the ground. Occasionally, during winter storms or summer thunderstorms, rains fall hard and fast causing heavy runoff and major flash flooding.

Typical of the desert, winds are frequent and strong, and humidity is generally low.

Present sources of smog are minimal; the major source being emissions from passing vehicles along Interstate 15. During summer months, occasional hazy conditions exist resulting from water vapor and, sometimes, from smog "spillover" from the Los Angeles basin. Due to unmanaged recreational off-road vehicle use, dust raised by speeding vehicles is a recurrent problem in the campground area.

2. Topography, Geology, and Minerals

a. Topography and Physiography

The Afton Canyon study area lies in the East Mojave Desert province, in an arid climatic zone. It is characterized by the barren slopes of the Cady and Cave Mountains and their sandy and gravelled pediment and alluvial fans. The Afton Canyon cuts an easterly course through the northeast trending mountain units. The canyon's base level lies at 1,200 feet above sea level, the surrounding peaks rise to 3,500 feet.

b. Geology, Structure, and Mineral Occurrence

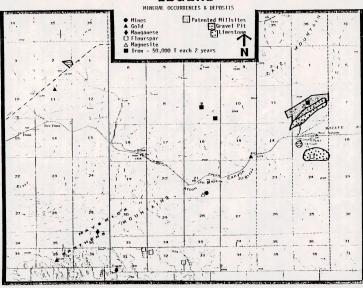
The area is underlain by rocks ranging in age from middle Paleozoic time (300 million years ago) to recent units of windblown sand and river deposits. The oldest rocks are Paleozoic limestones and dolomite, located along the walls of the mouth of Afton Canyon. Younger pre-Tertiary (older than 65 million years) granites and metamorphic rocks are also present. These form the cores of the Cady and Cave Mountain units. Tertiary volcanic rocks, both lava flows and ash, are present in the southern portion of the study area.

In Tertiary times, the California Desert was a lush savannah with broad lakes, accounting for the wealth of fossils found there today. The study area is a source of vertebrate fossils of animals peculiar to the western United States 1 to 15 million years ago. One of the lakes supporting this life, Lake Manix, was formed by recurrent faulting which dammed the ancestral Mojave River at Afton Canyon. The well preserved remains of a Lake Manix gravel bar northwest of the campground are an outstanding example of this type of late Ice Age formation.

Several large faults, including the Afton Canyon fault, out the study area on east-northeasterly trends. The area has been tectonically active (earthquake activity) and is expected to remain active.

Mineral deposits of gold, iron, manganese, fluorspar and magnesite occur inside the recreation area. Active mines for limestone and iron lie just outside the recreation area boundary near Basin. The extent of unpatented claims on locatable minerals has not been determined.

LEGEND



3. Soils

Soils in Afton Canyon consist of excessively drained, sandy alluvium on level to gently sloping alluvial fans and floodplains in the Mojave River bottom; excessively drained, very stony or very rocky, sandy loams to sands developed from bedrock with very steep upland slopes of 9 to 75 percent with about 30 percent rock outcrops; and more stratified gravelly sandy alluvium.

Impacts have occurred to soil surfaces where off-road vehicle activity takes place. A hill-climb site near the campground exhibits rock and soil displacement exposing lighter colored soils beneath. Off-road vehicle activity of this type results in soil compaction, destruction of plant cover, direct mechanical displacement of soil downslope by vehicles, and soil erosion by water. The displacement of rocks from the hill-climbs exposes lighter colored soil, resulting in highly visible strips of disturbance. Soils on level to gently sloping areas below the hill-climb site have been significantly compacted by off-road vehicle activity.

4. Water Resources

a. General Description

The Mojave River originates in the San Bernardino Mountains near Lake Arrowhead and is fed by snowmelt and seasonal rainfall. Downstream flow is controlled by Silverwood Reservoir and by the Mojave River Forks Dam. During non-flood periods, the river surfaces and sinks periodically as it percolates into the aquifers along its route. It flows past the communities of Victorville and Barstow, finally rising at Afton Canyon, before disappearing into the Mojave River Sink. Total drainage area above Afton is 2,121 square miles.

b. Streamflow Quantity

At a USGS gauging station near the BLM campground the average discharge is 5.14 ft 3 /s (28 year record). Mojave River streamflow is fed by several channel springs and is affected by groundwater extractions from upstream. Some summer periods have recorded no discharge, although plant types indicate continuous flow. Floods have swept through the canyon in the past changing the natural environment and destroying property. The peak discharge of record is 18,000 ft 3 /sec (January 26, 1969).

c. Channel Integrity

Except for the Afton Road ford, the streambed appears to be undisturbed and contains many pebbles, stones and rocks. Inspection of the ford during and immediately following vehicle crossings indicated that sediment disturbance and transient increases in turbidity are produced. Recreational activities could produce damage to riverbank stability and substrate integrity.

d. Water Quality

The water quality of the Mojave River at Afton Canyon was sampled on December 6, 1978. The water quality was excellent. Although a question exists concerning a large recorded concentration of total coliform bacteria, concentrations of other bacterial indicators were all within established limits. The river supported a rich and diverse community of bottom dwelling micro-invertebrates including the larvae of flies, damselflies, dragonflies, caddisflies, mayflies, adult and larval beetles, freshwater snails, and freshwater annelid worms. This diversity is indicative and typical of streams characterized by superior water quality. With the exception of values for total dissolved solids, chloride, fluoride, and boron, concentrations of chemical constituents met all of the water quality objectives established for the South Lahontan Basin. No sampled parameter indicates that the water is not fully suitable for the human contact that occurs as a normal part of the recreational activities at Afton Canyon. Because of its dependence on a diversity of changing land uses upstream and on the intensity of recreational activities taking place at Afton (these activities could produce additives to the water), the water quality at the Afton Canyon Recreation Area is highly vulnerable and subject to change.

e. Water Rights

The surface water and groundwater rights of property owners within the Afton Canyon study area are riparian and correlative, respectively, reflecting the fact that judicature of water rights by the State of California has not occurred. The status of water rights associated with the projected population growth of communities upstream will probably become increasingly appropriative in the future. Water uses upstream will increase and diversify, resulting in greater removal of groundwater before it reaches Afton Canyon. Several springs within the Mojave River channel are withdrawn under Public Water Reserve No. 107. No formal efforts have as yet been initiated to assert BLM's reserved water rights.

B. LIVING COMPONENT

Vegetation

Afton Canyon is rare and unusual in that it is one of the few true riparian areas in the California desert. The permanently flowing waters of the Mojave River are evidenced in the numerous species of riparian vegetation. The streambed contains dense mats of filamentous green algae (Chlorophyceae) and a heavy growth of periphyton, indicating continuous flow. Several species of sedges, rushes, cattails, reeds, and saltgrass grow along the banks of the river. Further from the river, on the riparian floodplain, grow a number of species of trees such as tamarisk, mesquite, willow, catclaw, cottonwood, and desert willow. Tamarisk and mesquite may be found in dense and extensive stands. Shrubby species like arrowweed, mule fat and rabbitbrush further indicate riparian habitat and are quite common on the river floodplain.

Due to periodic flooding, bodies of standing water are created in the form of ponds and marshes. It is at these marshes where the densest stands of sedges, rushes, reeds, cattails and yerba mansa occur. Presently there is a marsh in the SW 1/4 of Section 17, T. 11 N., R. 6 E. and another marshy area in the SW 1/4 of Section 18.

A BLM campground is presently located in the SE 1/4 of Section 17, T. 11 N., R. 6 E. Around the campground mesquite, tamarisk, and saltbush mix together with arrowweed and Russian thistle. Much of the ground is windblown sand with a few small grassy meadows. Some of the mesquite was burned away during a fire in the spring of 1978. This area and the tamarisk/arrowweed thickets immediately east of the campground are heavily riddled with ORV tracks.

The mesas above and surrounding Afton Canyon are reached by rocky slopes or sheer cliffs. The vegetation here is sparse and typical of relatively low elevation Mojave Desert scrub. The predominant species are creosote bush and bursage. Cheesebush and various species of choila dominate the numerous washes and canyons of the area. Trails from various types of vehicle use can be found here as well.

No federally listed endangered or threatened species of plants are known to occur in Afton Canyon. In addition, no rare or endangered species of plants on the California Native Plant Society's list are known to occur in the area in question.

2. Wildlife

The rare and unusual features in Afton Canyon that produce the abundance and diversity of riparian vegetation produce a concomitant abundance and diversity of wildlife. Many species occur in Afton Canyon that occur nowhere else in the desert save a few and widely scattered other riparian areas. This is particularly true of birds. Recent, unpublished BLM reports have documented 180 species of birds occurring at Afton Canyon (Weinstein, 1977; Cardiff, Cardiff, and Berry, 1977). Among the more significant are those species associated with riparian habitats such as Pintails, Teals, Rails, Coots, Gallinules, Grebes, Phalaropes, Snipes, Sandpipers, Egrets and Long-billed Marsh Wrens. American Bitterns, Marsh Hawks and Ospreys, which are on the Audubon Society's Blue List of bird species whose numbers or range is declining either regionally or throughout their range (Arbib, 1979) have also been observed at Afton Canyon. Intermittent recent breeding records exist for the Summer Tanager at Afton Canyon. This species is nominated for the BLM Sensitive Species List in California.

The extensive riparian habitat and surrounding steep and inaccessible cliffs offer excellent foraging and nesting opportunities for a number of raptors which occur at Afton Canyon. Among these are the Prairie

Falcon, American Kestrel, Sharp-shinned Hawk, Cooper's Hawk and Barn Owl. These species are on the Audubon Society's Blue List for 1979 (Arbib, 1979).

of biological significance in desert biomes is the occurrence of amphibians evidencing permanent water. Two species of amphibians, the Pacific treefrog and the bullfrog were observed in Afton Canyon (Brown, 1978). The red-spotted toad very likely occurs here as well. In addition to amphibians, two species of fish occur in the Mojave River at Afton Canyon. One of these, the black bullhead is an upstream introduction (very likely from Silverwood Lake). The Mohave chub evolved in isolation in the Mojave River and is considered to be the only species of fish endemic to that river. It has now completely hybridized with the originally allopatric Arroyo chub throughout the Mojave River proper (Hubbs and Miller, 1942) and today only that hybrid exists. The Mohave chub is presently listed as endangered on the Federal List of Endangered and Threatened Wildlife (Federal Register, 1970) and endangered by the State of California (State of California, Resources Agency, 1978) through California Administrative Code, Title 14, Section 670.5.

Bodies of standing water in Afton Canyon support small populations of the southwestern pond turtle. This is significant in that occurrence this far into the desert represents an area of outlying range for this otherwise coastal species (Stebbins, 1966). Other significant species of reptiles include the desert iguana, souther desert horned lizard, chuckwalla, desert hight lizard, desert banded gecko, and the California kingsnake. All these species are partially protected under California law. In addition, the western blind snake has been taken in areas below rocky slopes along the Mojave River in Afton Canyon (Brown, 1978).

The Mojave River at Afton Canyon represents an important watering site for desert bighorn sheep. The bulk of the resident sheep population is located in the Cady Mountains to the south of the canyon although sheep are occasionally observed near Cave Mountain to the northeast. The desert bighorn sheep is fully protected under California law as is the kit fox which also occurs in Afton Canyon. Other significant species of mammals occurring in Afton Canyon include the desert cottontail, blacktail jackrabbit, coyote, and the bobcat which is currently undergoing a Federal Review of Status.

Presently human-related activities, primarily in the form of off-road vehicle use, are producing a cumulative, negative effect on wildlife populations and habitat. A recent study on the effects of off-road vehicles in Afton Canyon noted significantly fewer species of birds in areas of high ORV use as opposed to areas receiving less vehicular traffic (Weinstein, 1978). Many species are being scared into sub-optimum habitats by continued ORV use. The report further noted additional habitat deterioration through illegal cutting of wood (primarily mesquite) and camping in undesignated areas as well as disturbance to and killing of wildlife through illegal shooting in and around the campground.

Desert bighorn sheep, a species which is highly sensitive to human disturbance, used to be more plentiful in the Afton Canyon area according to California Department of Fish and Game officials. The river, an important water source for the sheep, receives considerable off-road vehicle use and this has certainly resulted in decreased use by the sheep. Over the years the net result is a decrease in population numbers. This same situation holds true for other species which are particularly sensitive to human intrusions such as the Prairie Falcon. The sheer, inaccessible cliffs of Afton Canyon provide excellent mesting opportunities for these raptors; however, continued disturbance will almost certainly drive parent birds from the nest, abandoning their young. See Appendix for species lists.

C. HUMAN INTEREST VALUES

1. Recreation

Afton Canyon is used extensively by campers, rockhounds, sightseers, hikers, birdwatchers, picnickers, equestrians, researchers and ORV enthusiasts. The area's popularity stems from its proximity to major population centers, its ease of access from Interstate 15 and the rare and unusual scenery found there. Since the construction of the BLM campground in 1968, recreational off-road vehicle use has conflicted with other recreational uses and other resources at Afton Canyon.

Socio-Economic Factors

The area has little socio-economic impact on the surrounding region.

Wilderness

The Wilderness Inventory of the California Desert Conservation Area has determined that portions of Afton Canyon meets the criteria defined in Section 2(c) of the Wilderness Act of 1964. These portions have been designated as a part of a Wilderness Study Area (WSA). Congress will determine if the area will or will not become a wilderness area. Section 603(c) of the Federal Land Policy and Management Act (FLPMA) of 1976 requires the Bureau to protect the suitability of this study area for possible Congressional designation as wilderness.

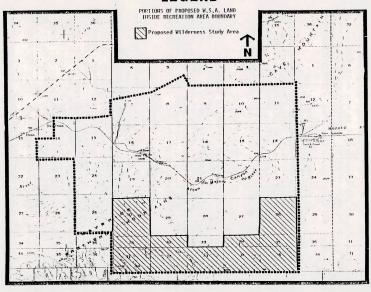
4. Areas of Critical Environmental Concern (ACEC)

The Desert Planning Staff has identified an area in Afton Canyon as a potential Area of Critical Environmental Concern for scenic, wildlife, vegetation and water resource values. The boundary of this area corresponds closely with the proposed boundary of the Canyon corridor.

5. Visual Resources

The Afton Canyon Recreation Area is divided into polygons whose landscape character and visual resource management (VRM) class are

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described below. These polygons and their ratings are shown on the attached map. The WSA lands inside the recreation area will be managed as VRM Class I during interim management. See Appendix for VRM class definitions.

a. Polygon 1 - VRM Class II

Landscape character: This polygon includes the Mojave River Gorge and forms the core of the recreation area. The canyon walls are steep with high cliffs broken by heavily eroded badland formations. Distinct alluvial fans lie at the mouths of side canyons. There is a diversity of color combinations and stark shadow detail in low angle light. Running water supports a variety of riparian vegetation types including freshwater marshlands. The combination of desert canyon, running stream and marshland is rare when viewed on a desert-wide basis making the scenery unusual. Major cultural modifications in the area include dirt roads, off-road vehicle scarring, old mine workings, a telephone line, the Union Pacific Raiiroad tracks with accompanying paraphernalia, a railroad siding with houses, and the BLM campground. Scenic quality is slightly depreciated by these inharmonious modifications but not so extensively that the scenic qualities are negated.

b. Polygon 2 - VRM Class III

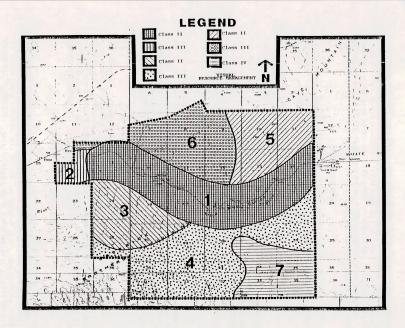
Landscape character: This polygon forms part of the western edge of the recreation area and includes the Mojave River Channel. Some sections of the channel have steep, eroded sides. Color is subdued and not a dominant element, but low angle light presents an interesting harmony of hues. There is a wash type vegetation due to the intermittent nature of streamflow and riparian plants that tap the underground water table. The railroad crosses the northeast corner of the polygon.

c. Polygon 3 - VRM Class II

Landscape character: This portion of the Maverick Brothers Mountains forms the southwestern part of the recreation area. The mountains are eroded into steep walled canyons with colorful displays of green, pink, blue and white. Vegetation is sparse and consists of creosote, cholla, and other low growing plants. There are mines and dirt roads, but these modifications have only local impact due to variation in the terrain.

d. Polygon 4 - VRM Class III

<u>Landscape character</u>: The scenery in this portion of the Maverick Brothers Mountains is typified by colorfully eroded mountains covered by sparse creosote scrub type vegetation. There are mines and dirt roads, but these modifications have only local impact due to variation in the terrain.



e. Polygon 5 - VRM Class II

Landscape character: This polygon, which includes part of Cave Mountain, is in the northeastern part of the recreation area. The area is mountainous but also eroded. Colorful formations in the south lead into blacks in the north. Vegetation is sparse and consists of creosote, cholla and other low growing plants. Modifications in the area include dirt roads.

f. Polygon 6 - VRM Class III

Landscape character: This polygon forms part of the northwestern portion of the recreation area. The Afton Canyon access road goes through the polygon along with a high voltage transmission line and associated power-line roads. Vegetation is limited to a few primary species dominated by creosote. The browns, tans, and greys throughout are muted and restricted to exposed surfaces of sand and small rocks.

g. Polygon 7 - VRM Class IV

Landscape character: This polygon forms the southeast part of the recreation area and is adjacent to the Maverick Brothers and Cady Mountains which enhance the visual quality of the polygon. The landform is low rolling hills, bajadas and washes. There is little color variation, no water and vegetation is mostly creosote association. There are numerous off-road vehicle roads and trails in the polygon.

Cultural Resources

A cultural resource assessment of the project area was conducted which included both a search of the existing literature and an intensive survey of areas to be directly impacted by the discrete actions outlined in the Activity Plan. Since cultural resources include both (1) physical remains, and (2) areas where significant human events occurred—even though evidence of the event no longer remains—both will be discussed in this section.

a. Physical Remains

Discrete actions outlined in the Activity Plan will directly affect specific locations in the study areas. These specific locations were systematically surveyed for cultural resources.

Campground Area

The campground was constructed upon a recorded archaeological site which consisted of a deposit of lithic material, basically flake debitage. This site has been repeatedly inundated by floods and disturbed by the construction of the campground. Located on the river plain, the site has been repeatedly washed out. Remains in the campground are now disturbed and only sparsely scattered flakes can be found. Because the

original provenience of the material remains cannot be determined, and because they have been chipped and broken by vehicles driving throughout the campground over a number of years, most of the utility for scientific purposes has been destroyed.

2) Designated Roads and Trails

All roads designated to remain open in the Activity Plan were assessed by the archaeologist by vehicle; however, no obvious cultural resource loci was noted except in "Pyramid Canyon" where significant deposits are prevalent. Locations where barriers are to be posted contain no cultural material.

3) Equestrian Area

The proposed location of the equestrian group camping area, on the mesa above the existing campground site was intensively surveyed for cultural resources. No cultural resources were located on this mesa; the surface is riddled with vehicle tracks, trails and recent fire pits.

4) Other Cultural Resources

During the field assessment, a number of cultural resource sites were located in areas not to be directly affected by the discrete actions. Bottle fragments (dated at approximately 1880 and a temporary prehistoric campsite and trail were located 1/4 mile distant from the campground. These cultural remains receive more adverse impact near the campground.

Other cultural resource material has been recorded in the Afton Canyon previous to this time, including a number of occupation sites (caves or rockshelters) and aboriginal foot trails. These sites and other areas within the project boundaries not to be directly affected by any of the discrete actions were not surveyed at this time since the overall impact of the proposed activity is beneficial (see Anticipated Impacts, Cultural Resource Section).

b. Significant Human Events

1) Prehistory

Prior to this time, no formal archaeological investigations have been performed in Afton Canyon (except a small area surveyed by the BLM for use as a horse corral). A number of important excavations were conducted along the lakes into which the Mojave River drains near Afton Canyon; these include (Cambell and Cambell (1937)) and (Drover (1979)) excavations at Soda Lake and East Cronese Lake, respectively. Their research indicates that the study area may have been occupied by man for the past 10,000 years. Based upon typologically distinct artifactual remains, the intervening time to the historic period has been divided into discrete chronological units, each representing

either different cultures or cultural adaptations to the desert environs. Traditionally, the project area has been occupied by the Chemehuevis (Southern Paiute), a group representative of the larger Uto-Azzican linguistic family which entered Southern California between 1,000 and 1,500 years ago. Ethnographic data (Laidlaw, personal comm., 1979) and archaeological data (Drover, personal comm., 1979) indicates that the Chemehuevi usurped an earlier Yuman group which occupied the area. This group is referred to as the Desert Mohave and is believed to be a desert adapted branch of the Mohave Indians on the Colorado River.

Ethnographic data (Laidlaw, personal comm., 1979) also indicates that, at the time of European arrival in North America, Afton Canyon was used by the Panamint, Shoshone, Mohave and Chemehuevi for collection purposes. Although tule grass (Sagittaria latifolia), cattail (Typha spp.), and devils claw were collected, it was the salt crystals found along the river and the lake shores which were of important economic values to these ethnic groups. The crystals were so important for commercial trade and consumption that boundary lines were set up to delineate exclusive occupation areas arond the shorelines; these were marked by cairns, petroglyphs, trails, rock alignments and intaglios. These boundary markers, also used as jurisdiction markers, were sometimes disputed resulting in minor skirmishes.

Segments of a number of Indian trails, including the Mojave Trail, are found in Afton Canyon and its vicinity. The Mojave Trail was a significant trading route linking the Mohave Indians of the Colorado River area with other cultural groups on the coast. After the Mohaves guided early explorers (including Fr. Garces in 1775-1776, the trail eventually evolved into a pack trail and later a wagon road called the "Mojave Road" and "the 31st parallel route." This road was important to the settlement and development of California; Afton Canyon was an important stopping place along the road due to the abundant water supply.

Historical Events

Following contact with Europeans and Americans, the traditional lifeways of many Native Americans changed. For example, following the introduction of the automobile, tourist trade on the West Coast was spurred. Within a 3-year period, 1929-1932, the Native American economic system was totally disrupted until it finally disappeared. Native Americans moved to population centers to obtain benefits and jobs, such as attending gas stations. At that time the Mojave Trail was, for the most part, abandoned by Native Americans.

Historically, the trail was first used by Fr. Garces in 1775-1776 when he was accompanied by Mohave guides who directed him through Afton Canyon. Garces' objectives were met - he did find a route between the new missions in California and those in New Mexico. However, his mission to proselytize Mohave Indians into the Catholic faith, for the most part, was not fulfilled. The Mohave, instead,

spread seeds of discontent among the mission Indians, stealing cattle and in other ways depredated the Spanish settlements. Late in 1819, Lt. Gabriel Moraga led a force of 50 men down the Mojave River, through Afton Canyon, in order to strike at the Mohave homelands. Moraga was forced by difficulties of terrain to turn back after reaching Soda Lake.

From 1826-1831, a number of American mountain men passed through the canyon. In 1826, Jedediah Strong Smith - the first American to reach California overland - passed through Afton. Other early Americans to make the crossing over the Mojave Trail included William Wolfskill, George C. Yount, Christopher "Kit" Carson, Ewig Young and many other trappers.

Around 1854, both Francois X. Aubry and Lt. Robert S. Williamson explored the "35th parallel route", probably traveling through Afton Canyon. Williamson's expedition resulted in a large volume of information about the route.

During the period of 1857-1860, a famous American frontfersman, Edward Fitzgerald Beale, conducted the great camel experiment over the 35th Parallel Route. The camels were used in the road work during the development of the route for a wagon road. In 1888, the road was declared suitable for traffic. The immigrant trains and mailmen who used the route encountered many difficulties with the Mohave during that period which finally led to expeditions against the Mohave and the eventual establishment of army posts along the road.

During the Gold Rush, the route was used extensively by prospectors. By 1905, the railroad through Afton Canyon was completed as a segment of the Salt Lake Route to Los Angeles. Flood damage occurred in 1938 when high waters took out sections of the railroad grade. Travel through the canyon by motor vehicle was difficult until the 1960's when the railroad constructed a maintenance road alongside its tracks.

In summation, Afton Canyon is a strategic location for studying culture history. The juxtaposition of so many cultural groups during a long span of time and within the same time period is unusual for a single location. The raw material - the physical remnants - of these cultures should provide us with a better understanding of how these cultural groups related to each other.

c. Native American Concerns

Specific locations of religious and ceremonial sites are often considered by Native American groups to be sacred. Springs, such as the Afton Canyon Springs, are usually considered to be sacred. Such knowledge is often restricted, even within a given cultural group to certain native "experts." Public knowledge of special sacred areas or locations could be sufficient impact to destroy the site's sanctity.

V. ANALYSIS OF PROPOSED ACTION AND ALTERNATIVES

A. UNMITIGATED IMPACTS

Non-living Component

a. Climate and Air Quality

1) Proposed Action

Little negative impact to air quality is anticipated as a result of the proposed action. The primary form of air quality degradation would be in the form of dust arousal resulting from vehicular traffic and surface disturbance during implementation of the recreation management plan recommendations. This impact is not anticipated to be of any consequence and may be judged as negligible. A positive impact would be less dust arousal by off-road vehicle use in the vicinity of the campground (management of vehicle use).

2) Alternative #1

Same as proposed action.

3) Alternative #2

Same as proposed action.

4) Alternative #3

Dust from vehicle use in the campground area would continue to be a $\operatorname{problem}$.

b. Topography, Geology and Minerals

The proposed action and alternatives are not expected to have any impacts upon topography, geology or minerals.

c. Soils

Proposed Action

The closure of sensitive areas will help stop soil damage and will be a positive impact. The proposed rehabilitation of areas scarred by vehicles, by replacing the surface cover would have a positive impact. The action would stabilize soil, gradually reduce erosion and allow the return of plant cover. The soil surface would be disrupted where proposed projects are constructed; this disturbance is considered to be of a minor nature with negligible impact.

2) Alternative #1

Except in areas proposed for closure to vehicles (under ICMP), this alternative would not relieve the existing problem, which is a downward trend in soil conditions due to indiscriminate ORV use. In the areas proposed for closure, the impact would be a positive one, as further damage would be halted.

3) Alternative #2

Same as the proposed action.

4) Alternative #3

No action would perpetuate an already downward trend in soil conditions.

d. Water Resources

1) Proposed Action

The proposed action would have a positive impact on water resources as potential sources of water pollutants would be controlled (sanitation facilities in the group area and management of vehicle use); there would be less turbidity and suspended solids from vehicle crossings and better protection of riverbank stability and substrate integrity (management of vehicle use); future water quantities for the support of fish, wildlife, vegetation and recreation would be insured (monitoring of streamflow and quality); and the public would be better informed about filood hazards (interpretive signing and handouts)

2) Alternative #1

Positive benefits that would be derived from the management of vehicle use would not be as great as in the proposed action. Past experience has shown that signs alone are not effective in vehicle management. Thus, impacts to parts of the river might continue. Future water quantities would not be insured; potential sources of water pollution would remain uncontrolled.

3) Alternative #2

This alternative would have the same positive impacts as the proposed action. In addition, there would be even less turbidity and suspended solids from vehicle crossings (due to controlled access), and the campground would be removed from the floodplain.

4) Alternative #3

This alternative would not alleviate the potential impacts to riverbank stability, riverbank substrate integrity, and additives to the water coming from recreational activities, and could possibly prevent the maintenance of future rights.

2. Living Component

a. Vegetation

1) Proposed Action

Implementation of the proposed action would have a positive effect on the vegetation of the area. Presently the major impacts to vegetation are the destruction of ripartan habitat through excessive and uncontrolled ORV use, illegal cutting and burning of wood and the potential for fire. The Activity Plan, if implemented properly, would alleviate, if not eradicate the causes of these impacts.

Physical disturbance to and degradation of some vegetation may be anticipated as a result of implementation of several of the discrete operations. Construction of an equestrian corral, construction of cable barriers, signing and posting are all actions which require physical, on-ground presence and are therefore likely to result in a mild but negative impact on existing vegetation.

Location of an equestrian group camping area and equestrian trails would impact existing vegetation. If the equestrian group camping area is to be located on the mesa up above the campground, in an area already heavily impacted, the ensuing impact to vegetation will be minor. Location of such a campsite down in the canyon corridor in the riparian habitat allowing stock grazing access to this habitat would have a substantial negative impact to existing vegetation. Likewise, the location of equestrian trails within the riparian habitat could also have a negative effect on that vegetation although this is not anticipated to be of any major consequence.

2) Alternative #1

Current impacts are described above. The proposed alternative would not be as effective as the proposed action, as past experience has shown signs alone are inadequate for vehicle management.

3) Alternative #2

Positive impacts would be the same as the proposed action, negative impacts are anticipated to be the same or even less intense. $\,$

4) Alternative #3

No action would perpetuate an already declining situation for this resource.

b. Wildlife

1) Proposed Action

The wildlife resource objectives of this Activity Plan are to "manage wildlife resources to protect both wildlife and wildlife habitat from any further human-related impacts and to enable recovery of damaged habitat." The overall intent of this plan is positive toward wildlife; if implemented properly, this Activity Plan should alleviate (and possibly eradicate some of) the causes of existing impacts to wildlife. It is therefore judged that implementation of this proposed action would have a beneficial impact on the wildlife and wildlife habitat of the area.

A certain amount of negative impacts to wildlife and habitat may be anticipated resulting from construction, signing and posting. These are discussed under "Vegetation" and can be expected to be of a minor nature. The same argument applies to the location of equestrian trails. Use of equestrian trails by riders and horses through the riparian habitat would result in disturbance to wildlife; however, equestrian use in Afton Canyon is minimal and, hence, no impact of any consequence is anticipated.

2) Alternative #1

The proposed alternative would have a positive impact similar to that of the proposed action, although past experience has shown that signs alone are inadequate for vehicle management.

3) Alternative #2

The proposed alternative would have a positive effect similar to the proposed action.

4) Alternative #3

No action will perpetuate an already declining situation for this resource.

3. Human Interest Values

a. Recreation

Proposed Action

Vehicle-oriented forms of recreation (such as rockhounding, sightseeing, camping, etc.) would not be seriously impacted by the proposed action, while non-vehicular forms of recreation would be encouraged and enhanced. Purely recreational ORV use would be altered as the use of designated routes in the Canyon corridor and existing routes in the backcountry

zone would be enforced. This negative impact to recreational ORV use is considered moderate.

Target shooting in the campground area would be restricted to half a mile distance, but hunting in the Afton area would not be substantially impacted.

The proposed interpretive flyer would have a positive impact. Also, the addition of equestrian facilities would create beneficial impacts.

2) Alternative #1

This alternative would have a positive effect on recreation similar to the proposed action, except that equestrian opportunities would not be enhanced by the addition of facilities and the interpretive program would be less intense.

3) Alternative #2

All vehicle-oriented forms of recreation would be negatively impacted by this proposed alternative. The level of impact is estimated to be high as all opportunity for vehicle recreation would be eliminated. Non-vehicular forms such as hiking, backpacking, photography, etc., would be enhanced. Equestrian recreation would not be enhanced. Shooting and hunting would be affected as in the proposed action. The proposed interpretive efforts would have a positive impact.

4) Alternative #3

No action would perpetuate unmanaged recreation use at Afton. The conflicts between recreation uses and users would continue.

b. Socio-Economic Factors

The proposed action and alternatives are expected to have little or no socio-economic impact on the surrounding region.

c. Wilderness

1) Proposed Action

This action would have a positive impact on preserving the wilderness character of the area during interim wilderness management (signing of existing roads and trails and increased ranger patrols).

2) Alternative #1

This alternative should have a similar impact to the proposed action, if the ICMP is enforced and if ranger personnel patrol the area.

3) Alternative #2

This alternative would have a positive impact exceeding that of the proposed action. If only those with valid prior existing rights would be allowed in the area, vehicle use would be negligible.

4) Alternative #3

This action might have a negative impact on preserving the wilderness character as the number of vehicle routes may proliferate with little or no ranger patrols and no directional signing.

d. Areas of Critical Environmental Concern (ACEC)

1) Proposed Action

This action would have a positive impact on protecting a potential ACEC in Afton Canyon (designation of vehicle routes, protection of sensitive habitats, increased patrol).

2) Alternative #1

This alternative would not be as effective in protecting the potential ACEC as the proposed action since past experience has shown that signs alone are not sufficient to manage vehicle use.

3) Alternative #2

This alternative would have an even more positive impact than the proposed action as access would be totally restricted.

4) Alternative #3

This alternative would perpetuate an already declining state in resource values and would offer no protection for any potential ACEC.

e. Visual Resources

1) Proposed Action

The proposed action would have some positive impacts to visual resources related to closure of vehicle routes and rehabilitation of vehicle scars. The numerous scars on the hillside near the proposed group site are quite visible from many parts of the recreational area; if the proposed rehabilitation plans work, it would greatly enhance visual resources. Closing and rehabilitating other roads would also serve to reduce contrasts.

The proposed kiosks will be designed in harmony with the surroundings, reducing visual impacts.

The key viewing point in the recreation area is the campground. The proposed horse corral would not be visible from the campground nor will the proposed sanitation facilities for the group site. It is anticipated that contrasts will be low for these facilities.

The post and cable barriers are proposed for constrution from railroad ties which repeats the dominant cultural theme of the area today - the railroad. The proposed barriers are only partially visible from the campground (they are screened by vegetation in many places) and produce a low contrast rating.

2) Alternative #1

The addition of regulatory signs would have a negligible to no impact on visual resources. The lack of physical controls to manage vehicle use may have a negative impact on visual resources by allowing easy access by vehicles into closed sensitive areas where they may cause visible damage.

3) Alternative #2

Impacts for this alternative would be similar to the proposed action with the following exceptions: (1) removing the campground from the Mojave River floodplain would be an enhancing measure, and (2) any new camping facility would cause some visual negative visual impact unless carefully designed by a landscape architect.

4) Alternative #3

No action would perpetuate an already declining condition in the visual resources of Afton Canvon.

f. Cultural Resources

Proposed Action

Presently, the major impacts to cultural resources in the project area are caused by illicit collecting of cultural remains, the displacement and breakage of artifacts by off-road vehicle traffic and the gradual wear upon the remains caused by the natural forces of erosion. Usually the process of natural erosion cannot be halted; however, the provisions included in the activity plan for personnel to manage visitor use and the restrictions placed upon vehicular traffic and camping in the project area will stem some of the present destruction of cultural resources. The implementation of the proposed action then will, in effect, benefit and stabilize the cultural resources.

The following discrete actions called for in the activity plan will directly affect cultural resources:

Campground: The overall effect of installing additional posts, cable barriers and interpretive signs will be to eliminate or alleviate the impacts of vehicles upon cultural materials found outside of the campground. Vehicles will continue to pass over the prehistoric remains in the campground. By creating fire pits in the individual campgrounds, the need for campers to construct random fire pits at their own discretion will be eliminated, thus reducing the chance of cultural remains being impacted.

Equestrian Area: The proposed location of the equestrian group camping area, corral, hitching posts and portable toilets on the mesa above the existing campground site has been heavily impacted previously—the surface is riddled with vehicle tracks and trails and fire pits. No significant cultural resources were located on this mesa (remains of recent campers were the only materials found); therefore, the proposed action will not have any impact upon cultural resources. Equestrian use of Afton Canyon has been ongoing historically and no new impacts to cultural resources from equestrian use is foreseen.

Designated Roads and Trails: No new roads will be constructed or old roads upgraded; the designation of roads will actually decrease the number of linear miles now being used in the study area. Because the plan calls for closing "Pyramid Canyon Road", the concentrations of archaeological resources located there will be protected from further vandalism and illicit collecting, thus the action will have a beneficial impact upon the cultural resources. A discrete action in closing the road will be to put up barriers across the roads. These areas were surveyed and no cultural resources will be negatively impacted by constructing these barriers across roads; however, by barricading undesignated roads, we will see an overall positive effect upon the cultural resources since they will be blocked off from vehicular access.

Informational Kiosks: The installation of informational kiosks with maps and brochure dispensers at the campground and on Afton Canyon Road near I-15 may result in a better public understanding of the laws governing the protection of cultural resources. The proposed kiosk site locations near I-15 and in the campground have not been surveyed by a cultural resource specialist. If cultural resources are located at the to be designated construction site, they will be impacted by construction of a klosk and parking area (see mitigation measures).

2) Alternative #1

This alternative would allow for greater protection of the cultural resources than the present situation provides; however, this alternative does not provide the concrete management prescriptions which have been formulated in the proposed action (i.e., barrier around the campground,

interpretive and informational kiosks, increased ranger patrols, etc.) which, if implemented, would help to stem the destruction of cultural resources in the project area.

3) Alternative #2

Closing the roads to the south of the canyon will deter illicit collecting, vandalism, and disturbance of cultural resource sites. Closing the campground will not really preserve the cultural remains found there since these have already been impacted to the point of being of little use for scientific purposes. Revoking the right of people to travel on the Old Mojave Road is viewed negatively by historians and others who would like to explore and visit traditional historical areas. This act could be viewed as an infringement upon the inherent right of the American public to visit an historical monument. To limit vehicle access of this area to railroad personnel only and not to the Native Americans who traditionally occupied this area could be construed as a breach of the "American Indian Religious Freedom Act" (P.L. 95-341).

4) Alternative #3

Uncontrolled recreational activities will yield a cumulative adverse effect upon cultural resources which could ultimately destroy the character and integrity of the cultural resources in Afton Canyon.

B. PROPOSED MITIGATING MEASURES

The following measures would mitigate most environmental impacts of the proposed action:

- Disturbed soil will be replaced or otherwise rehabilitated following all proposed construction.
- Recreationists will be made aware of other nearby recreation sites
 offering those recreation opportunities which may have been impaired
 by the implementation of the recreation plan (e.g., show locations
 of ORV "open" areas).
- Construction and other activities associated with implementation of the Recreation Plan should avoid spring months (March through June) to mitigate against disturbance to spring breeding activities of resident wildlife.
- Utilize ranger personnel to prevent any equestrian-related grazing in riparian habitat.
- A Bureau landscape architect will aid in the designing of the proposed interpretive kiosks to insure that established guidelines for VRM are met.

- 6. Sanitary facilities at the group area will be painted a color which will blend in with the surroundings (e.g., buff or tan).
- 7. Cultural Resources Considerations

A number of the discrete actions called for in the activity plan may have a direct negative impact upon cultural resources although the long term indirect effects will be positive. The negative impacts can be mitigated by implementing the following measures:

- a. A Bureau of Land Management cultural resource specialist should be on hand during the selection of the klosk site to insure that such a site is not located in an area where it could adversely affect cultural resources.
- b. After coordination with the State Historic Preservation Officer, the remaining lithic material located within the existing campground should be recorded, collected and cataloged. These materials may be curated at the San Bernardino County Museum or used in an interpretive center or display, possibly at Barstow Way Station.
- c. Although the activity plan will in essence produce an overall beneficial effect upon the cultural resources, if ongoing camping and recreational use of the canyon continues to be promoted, then we may expect a continued degradation of the resources. In order to retard some of these negative impacts it is recommended that qualified professional achaeologists and historians be encouraged to record, study, and evaluate remaining cultural resources in the Afton Canyon. This action may include salvaging resources remaining in the heavily vandalized prehistoric shelter caves and village sites located in the project area and the excavation of the partially disturbed site near the existing campround.

VI. RESIDUAL ADVERSE IMPACTS

A mild, short term negative impact on existing vegetation and wildlife habitat will result from proposed construction operations to implement the plan.

VII. RELATIONSHIP BETWEEN SHORT-TERM USE AND LONG-TERM PRODUCTIVITY

The proposed action is intended to improve the existing condition. If the current condition is improved, long-term productivity will be improved.

VIII.IRREVERSIBLE AND IRRETRIEVABLE IMPACTS AND COMMITMENT OF RESOURCES

Nothing proposed by this action will produce an irreversible or irretrievable impact or commitment of resources.

IX. RECORDATION OF PERSONS, GROUPS, AND GOVERNMENTAL AGENCIES CONSULTED

Lt. Glenn W. Moore, California Department of Fish and Game Bill Barnes, Whittier Gem & Mineral Society Mary F. Strong Eugene Cardiff, San Bernardino County Museum U.S. Corps of Engineers, Floodplain Section, Los Angeles, CA Dee Simpson, San Bernardino County Museum San Bernardino Flood Control District BLM Desert Planning Staff

X. INTENSITY OF PUBLIC INTEREST

Roger Haskins - Geologist

Numerous onsite and telephone interviews

The intensity of public interest is expected to be moderate to high. Interest is expected from those groups and individuals interested in the protection and conservation of the wildlife and the unusual natural environment and those interested in outdoor recreation (especially off-road vehicle-related recreation) in the Afton area.

XI. PARTICIPATING STAFF

Joel Mur - Team Leader, Outdoor Recreation Planner
James Bicket - Wildlife Biologist
Ruth Musser - Archaeologist
Duane Winters - Hydrologist
John Adams - Soil Scientist

APPENDIX A

Species List

*Vegetation

Scirpus olnevi Scirpus acutus Scirpus americanus Juncus textilis J. balticus Typhus angustifolia Phragmites australis Distichlis spicata Tamarix aphylla T. parvifolia T. ramosissima Prosopis pubescens Prosopis glandulosa Salix gooddingii Acacia greggii Populus deltoides Chilopsis linearis Pluchea sericea Baccharis glutinosa Chrysothamnus paniculatus Anemopsis californicus Atriplex canescens Atriplex lentiformis Salsola iberica Larrea tridentata Ambrosia dumosa Hymenoclea salsola Opuntia sp.

**<u>Wildlife</u> Piranga rubra

Botaurus lentiginosus Circus cyaneus Pandion haliaetus Falco mexicanus F. sparverius Accipiter striatus A. cooperi Tyto alba Hyla regilla Rana catesbeiana Bufo punctatus Ictalurus melas *** (Gila mohavensis (Gila orcutti Gila mohavensis x. orcutti Clemmys marmorata pallida Dipsosaurus d. dorsalis Phrynosoma platyrhinos calidiarum Sauromalus o. obesus Xantusia v. vigilis Coleonyx v. variegatus Lampropeltis getulus californiae Leptotyphlops humilis Ovis canadensis nelsoni Vulpes macrotis Sylvilagus audubonii Lepus californicus Taxidea taxus Canis latrans Felis rufus

- * Representative species list (includes most, but not all of the plant species occurring in Afton Canyon).
- ** Significant species (significant is defined here as pertaining to those species warranting partial or full protection under California law, those species currently listed on the National Audubon Society's Blue List of bird species whose populations, habitat and/or range is being reduced regionally or nationally, and game species or other species of wildlife which are of biological significance (such as being high on the food chain, of limited numbers or of specialized habitat preference).
- *** Listed here for reference only. Neither occurs at Afton Canyon.

APPENDIX B

Visual Resource Management Classes

<u>Class I.</u> This class provides primarily for natural ecological changes; however, it does not preclude very limited management activity. Any contrast created within the characteristic environment must not attract attention. It is applied to wilderness areas, some natural areas, wild portions of the wild and scenic rivers, and other similar situations where management activities, through legislation or policy, are to be restricted.

<u>Class II</u>. Changes in any of the basic elements (form, line, color, texture) caused by a management activity should not be evident in the characteristic landscape. A contrast may be seen but should not attract attention.

<u>Class III.</u> Contrasts to the basic elements (form, line, color, texture) caused by a management activity may be evident and begin to attract attention in the characteristic landscape. However, the changes should remain subordinate to the existing characteristic landscape.

<u>Class IV</u>. Contrasts may attract attention and be a dominant feature of the landscape in terms of scale; however, the change should repeat the basic elements (form, line, color, texture) inherent in the characteristic landscape.

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